Tyrannosauridae

The name means 'the tyrant lizards' and it's an apt one. The huge carnivores in this group – *Gorgosaurus*, *Daspletosaurus*, *Albertosaurus* and *Tyrannosaurus*, all from North America, and *Tyrannosaurus*' close cousin, *Tarbosaurus* from Asia – ruled the land during the final 20 million years of the Cretaceous. Their short, deep skulls allowed them to generate extreme bite forces, which more than made up for their tiny but strong forelimbs. Their massive, banana-shaped teeth were unlike other carnivores' – rather than razor-edged slashing blades they were more like giant, bone-crushing spikes. They all shared the typical tyrannosaurid shape – a massive head on the end of an S-shaped neck, two-digit hands, long hindlimbs and a long, heavy counterbalancing tail.

The large tyrannosaurids would have feasted on ceratopsians and hadrosaurs, although some tyrannosaur fossils show evidence of bite marks from other tyrannosaurids, suggesting they fought each other, or may even have engaged in cannibalism. Juveniles would have been capable of high running speeds, but this is unlikely for adults, as a fall for a fully grown tyrannosaur could easily prove fatal. However, adults would have been quick enough to hunt prey, and probably relied on both hunting and scavenging to find food.

The discovery of at least nine individuals of *Albertosaurus* from the same site at different stages of growth, and a group of 68 *Tarbosaurus* skeletons in the Gobi Desert, suggests that at least some tyrannosaurids were social animals, living and hunting together.

Key to plate

***1:* Tyrannosaurus rex**
Late Cretaceous, North America
Length: 12m; Weight: 6000kg
The most famous dinosaur, first discovered in 1902, *Tyrannosaurus* has captured the imagination like no other. With 60 teeth, a powerful bite and a superb sense of smell, *Tyrannosaurus* was undoubtedly a ferocious killer. With the discovery in 2012 of the slightly smaller tyrannosaurid, *Yutyrannus huali*, with 20cm-long feathers, it now seems highly possible that *Tyrannosaurus* was also covered in some sort of feathers and, like other tyrannosaurids, may have hunted in packs.

Because it is known from so many good specimens, scientists have been able to build up a detailed picture of *Tyrannosaurus*' appearance, development and behaviour. We know that *Tyrannosaurus* went through a huge growth spurt from 13 to 17 years old and was fully grown by its early 20s. Juveniles had blade-like teeth, which later become conical, and over time its skull thickened and its body bulked out massively. However, being a *Tyrannosaurus* wasn't easy. They could live to be 30 years old but only 2 per cent of fossil finds showed tyrannosaurs achieving their full natural lifespan.